**Day1. Assignment**

**1. What is cloud computing?**

**Ans**: Cloud computing is the on-demand availability of computer system resources, especially data storage and computing power, without direct active management by the user also known as distribution of services or resources to the user or the customer from a cloud provider through internet. Two of the major cloud service providers are   
--Amazon web services and Microsoft Azure

**2. What are the different types of cloud based on service and deployment?**

**Ans**: There are three main types of cloud environment, also known as cloud deployment models. Business can choose to run their applications on public, private or hybrid clouds depending on their requirements.

**Public cloud** – A public cloud environment is owned by an outsourced cloud provider and is accessible to many businesses through the internet on a pay-per-use model. Public clouds are ideal for small and medium sized businesses with tight budget and an easy platform to deploy IT resources.

**Private cloud** **-** A Private Cloud is a model of cloud computing where the infrastructure is dedicated to a single user organization. Private cloud provides a high level of security and privacy to data through firewalls and internal hosting. It also ensures that operational and sensitive data are not accessible to third-party providers

**Hybrid cloud** - A hybrid cloud is a model in which applications are running in a combination of different environments. Hybrid cloud computing approaches are widespread because customers today rely entirely on the public cloud or a private cloud.

**3. What is scaling and different types of Scaling?**

**Ans**: Scaling is the process of increasing or decreasing the required IT resources based on organizations need to meet the business demand.

**Horizontal scaling** – Also known as scaling out refers to integrating additional server nodes or machines into your existing system infrastructure, it involves adding more nodes to an existing resource pool to distribute the workload through the load balancer

**Vertical scaling** – Also known as scale up is the process of upgrading or adding resources to the existing system infrastructure on demand. Unlike horizontal scaling vertical scaling doesn’t involve adding more machines to the system, which in turn is increasing existing system resources.

**4**. **What are the advantages of Cloud?**

Ans: **Back-up and restore data** - Once the data is stored in the cloud, it is easier to get back-up and restore that data using the cloud.  
**Improved collaboration** – Cloud application improves collaboration by allowing groups of people to quickly and easily share information in the cloud via shared storage.  
**Accessibility** – Could allows us to quickly and easily access store information anywhere, anytime in the whole world, using an internet connection. An internet cloud infrastructure increases organization productivity and efficiency by ensuring that our data is always accessible  
**Low cost maintenance**- Cloud computing reduces both hardware and software maintenance costs for organizations.  
**Mobility** -Cloud computing reduces both hardware and software maintenance costs for organizations.  
IServices in the **pay-per-use model**- Cloud computing offers Application Programming Interfaces (APIs) to the users for access services on the cloud and pays the charges as per the usage of service  
**Data security and unlimited storage capacity -** Data security is one of the biggest advantages of cloud computing. Cloud offers many advanced features related to security and ensures that data is securely stored and handled.

**5. What is Data center?**

**Ans** : Data center is a facility made up of networked computers, storage systems, and computing infrastructure that businesses and other organizations use to organize, process, store large amounts of data. A business typically relies heavily on applications, services, and data within a data center, making it a focal point and critical asset for everyday operations.

**6. What do you mean by multi-tenant?**

**Ans** : Mutli-tenant is the process where the server is shared between different users under an organization or the server is split into two partitions by the cloud provider. It is a type of software architecture where a single software instance can serve multiple distinct user groups. It means that multiple customers of cloud vendors are using the same computing resources. As they are sharing the same computing resources but the data of each Cloud customer is kept separate and secure.   
Eg : Banks, multiple people can store money in the same Bank. But every customer asset is different.

**7. What do you mean by Pay-as-you-go?**

**Ans** : Pay-as-you-go is a type of payment method used in cloud computing, where we pay the bills only for the resources used. One major benefit of the pay-as-you-go method is that there are no wasted resources, since users only pay for services procured, rather than provisioning for a certain amount of resources that may or may not be used. **Eg : EC2**

**8. What do you mean by Cloud provider?**

**Ans** : A cloud service provider is a third-party company offering a cloud-based platform, infrastructure, application or storage services  
 **Examples**: Dropbox, a file storage and sharing system. Microsoft Azure, which offers backup and disaster recovery services, hosting, and more. Rackspace, which offers data, security, and infrastructure services.  
AWS, compute , storage , databases , analytics , networking , mobile , developer tools , management tools , IoT , security , and enterprise applications.

**9. What is cloud service?**

**Ans**: The term cloud services refer to a wide range of services delivered on demand to companies and customers over the internet. These services are designed to provide easy, affordable access to applications and resources, without the need for internal infrastructure or hardware.  
cloud computing is the delivery of computing services including servers, storage, databases, networking, software, analytics, and intelligence over the Internet to offer faster innovation, flexible resources, and economies of scale.

**10. What are the key characteristics of cloud computing?**

**Ans** : **On demand, self-service** : It is one of the significant and essential features of Cloud Computing. It enables the client to constantly monitor the server uptime, abilities, and allotted network storage. This is a fundamental characteristic of Cloud Computing, and a client can likewise control the computing abilities as per his needs.   
**Broad Network access** : The client can access the cloud data or transfer the data to the cloud from any place just with a device and internet connection. These capacities are accessible everywhere in the organization and get to with the help of the internet.  
**Resource pooling** :  Resource pooling means that a cloud service provider can share resources among several clients, providing everyone with a different set of services as per their requirements. It is a multi-client strategy that can be applied to data storage services, processing services, and bandwidth provided services.  
**Rapid Elasticity**: This cloud characteristic enables cost-effective running of workloads that require a vast number of servers but only for a short period. Many clients have such workloads, which can be run very cost-effectively because of the rapid scalability of Cloud Computing.

**10. What is X as a service?**

**Ans**: As a service or X as a service (XaaS) is the collective term used to describe the many different and increasing numbers of services provided over the internet, that traditionally have been provided locally.  
**Eg**: Storage in form of databases, Network services, Application deployment, Servers, infrastructure, disaster management.